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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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MCANDREWS HELD & MALLOY, LTD
500 WEST MADISON STREET
SUITE 3400
CHICAGO, IL 60661

EXAMINER
DUNCAN, MARC M

ART UNIT	PAPER NUMBER
2113	

DATE MAILED: 03/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/600,243	BABU ET AL.
	Examiner	Art Unit
	Marc Duncan	2113

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>20 June 2003</u>.

2a)☐ This action is **FINAL.** 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-15</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1,2,5-7 and 10-13</u> is/are rejected.

7)☒ Claim(s) <u>3,4,7-10,12,14 and 15</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>20 June 2003</u> is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Status of the Claims

Claims 1, 5, 6, 10 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Keller et al. (5,355,487).

Claims 2, 7, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keller et al. in view of McCanne et al.

Claims 3, 4, 7, 8, 9 and 10-15 are objected to.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the first second and third memories must be shown or the feature(s) canceled from the claim(s). Claim 11 contains limitations for a first, second and third memory, however only two memories are shown in the drawings and described in the specification. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet,

and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claims 4, 7, 9, 10-15 are objected to because of the following informalities: Claims 4, 9 and 15 contain an incorrect spelling of the word pseudo. Claims 7 and 12 are missing a semicolon after the first occurrence of the word "interrupt." Claim 10 requires a semicolon in place of the comma at the end of line 4. Claims 11-15 contain all limitations of claim 10 and therefore are also objected to for the same reasoning. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 5, 6, 10 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Keller et al. (5,355,487).

Regarding claim 1:

Keller teaches:

generating an interrupt (col. 3 lines 61-65 – timer interrupt);

storing an address from a program counter at the time of the interrupt (col. 3 lines 61-65 and col. 6 lines 55-59);

and updating a profile with the address from the program counter (col. 6 line 67-col. 7 line 3).

Regarding claim 5:

Keller teaches:

wherein updating the profile further comprises: incrementing a count associated with an address range, the address range comprising the address in the program counter (col. 5 lines 39-41 and col. 6 line 67-col. 7 line 25 – the counts are for each subroutine, i.e. a particular address range.).

Regarding claim 6:

Keller teaches:

a host operation for performing a host function, the host operation comprising a first plurality of instructions (col. 3 lines 54-57 – a program is a host operation comprising a plurality of instructions);

and an interrupt subroutine for interrupting the host function (col. 3 lines 61-65),

said interrupt subroutine comprising:

a debugging tool for profiling the frequency that particular instructions of the first

plurality of instructions are executed (col. 3 line 61-col. 4 line 6 and col. 6 lines 55-59).

Regarding claim 10:

Keller teaches:

a first memory for storing a host operation comprising a first plurality of

instructions (col. 3 lines 54-57 – a program that is executed by a processor must

necessarily be stored and such storage necessitates the inclusion of a memory), a

processor for executing the first plurality of instructions (col. 3 lines 54-57);

a timer for interrupting the processor (col. 3 lines 61-65);

and a second memory for storing an interrupt subroutine (col. 3 lines 61-65 – the

presence of an interrupt subroutine necessitates a memory to store said interrupt

subroutine), the processor executing the interrupt subroutine after the timer interrupts

the processor (col. 3 lines 61-65);

and the interrupt subroutine comprising:

a debugging tool for measuring the frequency that particular instructions of the

plurality of instructions are executed (col. 3 line 61-col. 4 line 6 and col. 6 lines 55-59).

Regarding claim 11:

Keller teaches:

a third memory for storing a profile (col. 6 lines 60-67 and Fig. 4 – 50), the profile

profiling the frequency that particular instructions of the plurality of instructions are

executed (col. 3 line 61-col. 4 line 6).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 2, 7, 12 and 13 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Keller et al. in view of McCanne et al.

Regarding claims 2, 7 and 12:

The teachings of Keller are outlined above.

Keller does not explicitly teach generating a pseudo-random number after

generating the interrupt and loading a timer with a value that is a function of the pseudo-

random number. Keller does, however, teach profiling a CPU execution using a timer

interrupt.

McCanne teaches generating a pseudo-random number after generating the

interrupt and loading a timer with a value that is a function of the pseudo-random

number (see Section 3 Implementation – paragraphs 1 and 4).

It would have been obvious to one of ordinary skill in the art at the time of

rejection to combine the pseudo-random timer of McCanne with the timer teachings of

Keller.

One of ordinary skill in the art would have been motivated to make the

combination because Keller teaches that a periodic timer is used to profile the executing

of a processor. McCanne teaches that the use of a period timer can cause a problem

wherein an isochronous process can become synchronized with the periodic timer and,

thus, an inaccurate profile will result (see section 2.1 – paragraph 4). McCanne further

teaches that this synchronization issue can be addressed through the use of a

randomized sampling interval utilizing a pseudo-random number to program the timer

used to create the interrupts (see section 2.2 and section 3 – paragraph 4).

Regarding claim 13:

Keller teaches:

incrementing a count associated with an address range, the address range

comprising the address in the program counter (col. 5 lines 39-41 and col. 6 line 67-col.

7 line 25 – the counts are for each subroutine, i.e. a particular address range.).

Allowable Subject Matter

Claims 3, 8 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Prior art was not found that explicitly teaches or fairly suggests wherein the timer value is a function of the pseudo-random number and a user-provided parameter as outlined in claims 3, 8 and 14. These limitations are considered allowable only in combination with the limitations of the base claims and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc Duncan whose telephone number is 571-272-3646. The examiner can normally be reached on M-F 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Beausoliel can be reached on 571-272-3645. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

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